



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,164	08/08/2003	Michael F. Weber	56718US005	2940

32692 7590 11/15/2004

3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER

KOVAL, MELISSA J

ART UNIT	PAPER NUMBER
----------	--------------

2851

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/637,164	Applicant(s) WEBER ET AL.	
	Examiner Melissa J Koval	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>November 14, 2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claims 1-23 are objected to because of the following informalities: Claim 1, for example, uses the term "1,4 terephthalate," however applicant's specification teaches "1,4-dimethylterephthalate" in Table 1, page 26, for example. All of the remaining claims 2-12, depend from claim 1 or an intervening dependent claim. The examiner interprets claims 22 and 23 to include all of the limitations of claim 1. Applicant should carefully review all of the claims to make sure that any necessary distinctions between "dimethyl terephthalate" and "terephthalate" are made clear.

Similarly in claim 2, the term "1,4-cyclohexane dicarboxylate" appears. Applicant's specification teaches "1,4-dimethyl cyclohexane dicarboxylate" in Table 1, page 26, for example. Applicant should carefully review all of the claims to make sure that any necessary distinctions between "dimethyl cyclohexane dicarboxylate" and "cyclohexane dicarboxylate" are made clear.

Claims 13 through 21 are objected to for the same reasons given with respect to the objections of claims 1 and 2.

Also, claims 2 and 14 end with improper punctuation. Applicant may want to review all of the claims for punctuation.

Appropriate correction is required.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

Art Unit: 2851

unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-23 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-40 of Weber et al. U.S. Patent No. 6,609,795 B2 in view of "Merriam Webster's College Dictionary, Tenth Edition".

The claims of the patent meet all of the limitations of the application except that the patent does not use the limitation "comonomer subunits" with respect to the composition of the copolymer comprised by the second material layer. Because a comonomer is defined as one of the constituents of a copolymer, the examiner does not believe that the presence of the limitation "comonomer subunits" patentably distinguishes the claims over the prior art of record. See "Merriam Webster's College Dictionary, Tenth Edition," page 233.

A comparison of the claims of the application to the claims of Weber et al. ('795 B2) appear below:

Claim 1 sets forth: "A polarizing beam splitter comprising (See claim 1, line 1 of '795 B2):

(a) a birefringent film comprising a plurality of first material layers and a plurality of second material layers, wherein the first material layers (See claim 1, lines 2 through 4 of '795 B2.) comprise a polymer selected from a group consisting of polyethylene terephthalate and copolymers of polyethylene terephthalate and polyethylene naphthalate (Claim 4 of '795 B2.) and the second material layers comprise a copolyester comprising, as comonomer subunits, 1,4-terephthalate, 1,2-ethane diol, 1,4-cyclohexane dicarboxylate, and 1,4-cyclohexane dimethanol (See claims 6 and 7 of '795 B2.); and

(b) at least one prism comprising a base adjacent a first major surface of the birefringent film, wherein the at least one prism comprises a refractive index greater than 1.6 (See claim 1, lines 8 through 11, of '795 B2.).” The claims of the patent do not include the limitation “comonomer subunits”.

Claim 2 sets forth: “ The polarizing beam splitter of claim 1, wherein copolyester of the second material layers comprises, as comonomer subunits, about 5 to 45 mol% 1,4-terephthalate, about 5 to 45 15 mol% 1,2-ethane diol, about 5 to 45 mo1% 1,4-cyclohexane dicarboxylate, and about 5 to 45 mo1% 1,4-cyclohexane dimethanol;” See claims 8 and 9 of '795 B2. The claims of the patent do not include the limitation “comonomer subunits”.

Claim 3 sets forth: “The polarizing beam splitter of claim 1, wherein the first material layers comprise a copolymer of polyethylene terephthalate and polyethylene naphthalate that contains less than 50 mol% polyethylene naphthalate, based on the total amount of first material.” See claim 3 of '795 B2.

Claim 4 sets forth: "The polarizing beam splitter of claim 1, wherein the first material layers comprise polyethylene terephthalate." See claim 4 of '795 B2.

Claim 5 sets forth: "The polarizing beam splitter of claim 1, wherein the copolyester of the second material layers further comprises, as comonomer subunits, neopentyl glycol." See claim 8 of '795 B2. The claims of the patent do not include the limitation "comonomer subunits".

Claim 6 sets forth: "The polarizing beam splitter of claim 1, wherein the copolyester of the second material layers further comprises, as comonomer subunits, trimethylol propane." See claim 7 of '795 B2. The claims of the patent do not include the limitation "comonomer subunits".

Claim 7 sets forth: "The polarizing beam splitter of claim 1, wherein the copolyester of the second material layers further comprises, as comonomer subunits, 2-butyl, 2-ethyl 1,3-propanediol." The claims of the patent do not include the limitation "comonomer subunits". See claim 8 of '795 B2.

Claim 8 sets forth: "The polarizing beam splitter of claim 1, wherein the copolyester of the second material layers further comprises, as comonomer subunits, neopentyl glycol and trimethylol propane." The claims of the patent do not include the limitation "comonomer subunits". See claims 7 and 8 of '795 B2.

Claim 9 sets forth: "The polarizing beam splitter of claim 1, wherein the copolyester of the second material layers further comprises, as comonomer subunits, trimethylol propane and 2-butyl 2-ethyl 1,3-propanediol." The claims of the patent do not include the limitation "comonomer subunits". See claims 7 and 8 of '795 B2.

Claim 10 sets forth: "The polarizing beam splitter of claim 1, wherein the at least one prism comprises a first right angle prism and a second right angle prism, wherein the first right angle prism and the second right angle prism are positioned so as to form substantially a cube and the birefringent film is disposed between the two prisms so as to lie along the diagonal of the cube." See claim 2 of '795 B2.

Claim 11 sets forth: "The polarizing beam splitter of claim 1 having a contrast ratio greater than about 300 to 1." See claim 10 of '795 B2.

Claim 12 sets forth: "The polarizing beam splitter of claim 1 having a contrast ratio greater than 1000 to 1." See claim 11 of '795 B2.

Claim 13 sets forth: A multi-layer film comprising a plurality of first material layers and a plurality of second material layers, wherein the first material layers comprise a polymer selected from a group consisting of polyethylene terephthalate and copolymers of polyethylene terephthalate and polyethylene naphthalate and the second material layers comprise a copolyester comprising, as comonomer subunits, 1,4-terephthalate, 1,2 ethane diol, 1,4-cyclohexane dicarboxylate, and 1,4-cyclohexane dimethanol." See claims 1, 4 and 7 of '795 B2. The claims of the patent do not include the limitation "comonomer subunits".

Claim 14 sets forth: "The multi-layer film of claim 13, wherein copolyester of the second material layers comprises, as comonomer subunits, about 5 to 45 mol% 1,4-terephthalate, about 5 to 45 mol%, 1,2-ethane diol, about 5 to 45 mol% 1,4-cyclohexane dicarboxylate, and about 5 to 45 mol% 1,4 cyclohexane dimethanol;" The claims of the

patent do not include the limitation "comonomer subunits". See claims 8 and 9 of '795 B2.

Claim 15 sets forth: "The multi-layer film of claim 13, wherein the first material layers comprise a copolymer of polyethylene terephthalate and polyethylene naphthalate that contains less than 50 mol% polyethylene naphthalate, based on the total amount of first material." See claim 5 of '795 B2.

Claim 16 sets forth: "The multi-layer film of claim 13, wherein the first material layers comprise polyethylene terephthalate." See claim 4 of '795 B2.

Claim 17 sets forth: "The multi-layer film of claim 13, wherein the copolyester of the second material layers further comprises, as comonomer subunits, neopentyl glycol." The claims of the patent do not include the limitation "comonomer subunits". See claims 6 through 8 of '795 B2. Claims 20 and 21 are rejected by comparison with the same claims.

Claim 18 sets forth: "The multi-layer film of claim 13, wherein the copolyester of the second material layers further comprises, as comonomer subunits, trimethylol propane." See claims 6 and 7 of '795 B2.

Claim 19 sets forth: "The multi-layer film of claim 13, wherein the copolyester of the second material layers further comprises, as comonomer subunits, 2-butyl 2-ethyl 1,3-propanediol." See claims 6 through 9 of '795 B2.

Claim 22 sets forth: "An optical device, comprising:
(a) the polarizing beam splitter of claim 1, a first path being defined through the polarizing beam splitter for light in a first polarization state; and

(b) at least one imager disposed to reflect light back to the polarizing beam splitter, portions of light received by the at least one imager being polarization rotated, polarization rotated light propagating along a second path from the imager and through the polarizing beam splitter." See claim 36 of '795 B2.

Claim 23 sets forth: "A projection system, comprising:

- (a) a light source to generate light;
- (b) conditioning optics to condition the light from the light source;
- (c) an imaging core to impose on image on conditioned light from the conditioning optics to form image light, the imaging core including the polarizing beam splitter of claim 1 and at least one imager; and
- (d) a projection lens system to project the image light from the imaging core." See claim 40 of '795 B2.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

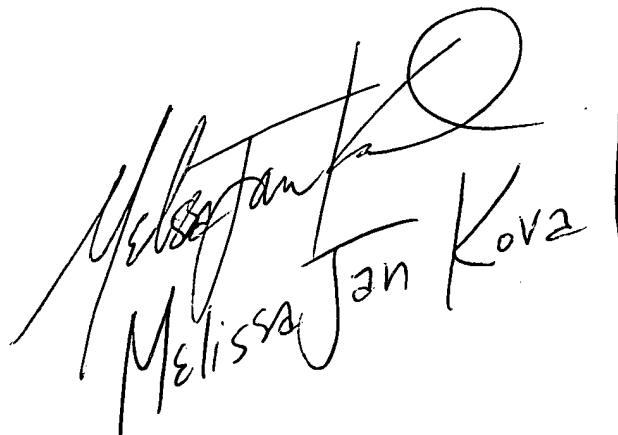
Bruzzone et al. U.S. Patent 6,721,096 B2 teaches a polarizing beam splitter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa J Koval whose telephone number is (571) 272-2121. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571)272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJK


Melissa Jan Koval